

DEPARTMENT OF TRANSPORTATION**DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch

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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 99.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-002224**Date Inspected:** 27-Mar-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 830**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1930**Contractor:** Japan Steel Works, Ltd.**Location:** Muroran, Japan

CWI Name:	Tomio Imai and Harumi Kohama			CWI Present:	Yes	No	
Inspected CWI report:	Yes	No	N/A	Rod Oven in Use:	Yes	No	N/A
Electrode to specification:	Yes	No	N/A	Weld Procedures Followed:	Yes	No	N/A
Qualified Welders:	Yes	No	N/A	Verified Joint Fit-up:	Yes	No	N/A
Approved Drawings:	Yes	No	N/A	Approved WPS:	Yes	No	N/A
				Delayed / Cancelled:	Yes	No	N/A
Bridge No:	34-0006			Component:	Tower, Jacking and Deviation Saddles		

Summary of Items Observed:

On this date OSM Quality Assurance (QA) Representative Daniel L. Reyes observed the Procedure Qualification Record (PQR) Testing and Ultrasonic Testing (UT) relative to this project. The following was observed:

Foundry Shop

At the start of the shift this QA inspector observed the continued welding and the in process weld inspection of the Procedure Qualification Record (PQR) test plate identified as CW-3. The welding was performed by Japan Steel Works, Ltd. (JSW) welding personnel Satoshi Mokrohashi, ID 91-2255 who appeared to utilize the gas-shielded Flux Cored Arc Welding (FCAW) process as per the Welding Procedure Specification (WPS) SJ-2941 WP-3 which was also used by JSW Welding Engineer personnel Tomio Imai as a reference. The consumable utilized during the welding of the test plate was manufactured by Hobart Brothers and appeared to be identified as a Tri-Mark TMK-95K2 products. The size of the electrode utilized appeared to be 1.6 millimeters in diameter. This QA inspector observed the Welding Engineer Mr. Imai verify the minimum preheat temperature of 190 degrees Celsius utilizing a heat indicator crayon. At the conclusion of verifying the surface temperature Mr. Imai commence verifying the amperage, voltage and the travel speed which was observed by this QA inspector as follows; 288 AC amps, 24.0 AC volts with a travel speed measured at 37 cm/m.

Later in the shift this QA inspector observed Mr. Imai perform the in process weld inspection of the subsequent weld layers and verify the following; the minimum preheat temperature, maximum interpass temperature and the DCEP welding parameters. At this time this QA inspector reviewed the working PQR sheet documentation and observed the following average welding parameters; 310 DC amps, 33 DC volts with a travel speed measured at 38 cm/m. The welding of the first side of the Test Plate identified as CW-3 was completed during this shift on this date and appeared to comply with ASME IX, ASTM A488 and the WPS.

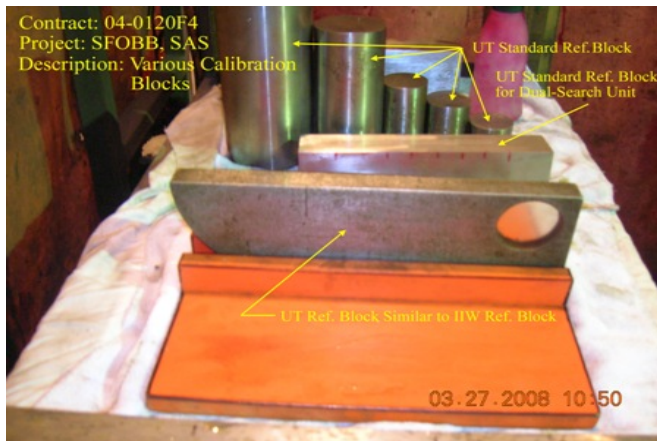
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Later in the shift, at the conclusion of air carbon arc cutting (backgouge) and grinding this QA inspector observed Nikko Inspection Services (NIS) level II personnel, Katsuhisa Nishida perform a dimensional verification of the backgouged which appeared to be 10mm in depth and 20mm in width which was measured from the top of the plate surface. At the conclusion of the dimensional verification Mr. Katsuhisa Nishida proceeded with the Magnetic Particle Testing (MPT) of the backgouged surface. At the completion of the MPT Mr. Katsuhisa indicated that there were no discontinuities found. The MPT was performed utilizing an AC Yoke and was performed in the longitudinal and transverse directions and Mr. Katsuhisa also performed a lift test utilizing test block # 6 and a sensitivity test utilizing a Field Indicator Gauge prior to performing the testing. Both test appeared to be in compliance with the contract documents.

At approximately 13:30 hours this QA inspector observed the welding of the second side and the in process weld inspection performed by JSW personnel Tomio Imai. Mr. Imai verified the minimum preheat temperature of 182 degrees Celsius and the welding parameters which were observed as follows; 285 DC amps, 32.5 DC volts and the travel speed were measured at 34 cm/m. The welding of this PQR Test Plate was completed during this shift on this date and appeared to comply with the contract documents. The observations by this QA inspector were performed randomly and a TL-6032, Welding Witness Report was generated by this QA inspector on this date.

Later in the shift this QA inspector observed the continued Ultrasonic Testing (UT) of the West Deviation Saddle identified as W2E2 which was performed by Nikko Inspection Services (NIS) technician Harumi Kohama. The UT technician Mr. Kohama appeared to perform the testing utilizing the shear wave technique. This QA inspector also observed the UT technician perform the calibration utilizing a calibration block similar the a International Institute Welding (IIW) Block and a DAC curve block to establish a four (4) point DAC curve. The ultrasonic testing was not completed during this shift on this date and appeared to comply with the JSW N.D.E. Procedure identified as SJ-2878 Rev. 2 as outlined on pages 7 through 12 and the contract documents. (See Digital Photographs)



Summary of Conversations:

There were general conversations with Japan Steel Works, Ltd. Deputy Manager Bridge Group personnel Kazunori Sato relative to the Procedure Qualification Record Test, ultrasonic testing of the steel castings and the location of the welding and inspection personnel.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Venkatesh Iyer, (858) 967-6363, who represents the Office of Structural Materials

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for your project.

Inspected By: Reyes,Danny

Quality Assurance Inspector

Reviewed By: Lanz,Joe

QA Reviewer